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Zygophyllum fontanesii
(See page 18)

CACTUS AND SUCCULENT JOURNAL

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A monthly magazine to promote the Society and devoted to Cacti and Succulents for the dissemination of knowledge and the recording of hitherto unpublished data in order that the culture and study of these particular plants may attain the popularity which is justly theirs. "The Cactaceae," by N. L. Britton and J. N. Rose, has been adopted by this journal for purposes of identification. (Membership and subscription $3.00 per year, foreign $3.00 per year.) Mail membership application to the Society at 6162 N. Figueroa Street, Los Angeles, Calif. ($3.00 MUST accompany the application.) *Managing Editor.* SCOTT HASELTON, 6162 N. Figueroa St., Los Angeles, Calif.; *Assistant Editor and Chairman Membership Committee,* H. WESTON; *Editorial Staff,* JAMES WEST, 745 Fifth Ave., San Rafael, Calif.; ERIC WALTHER, 2667 McAllister Ave., San Francisco, Calif.; EDGAR M. BAXTER, Bellflower, Calif.

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Zygophyllum fontanesii W. B.

By OSCAR BURCHARD, La Orotava, Tenerife

A particularly attractive succulent is *Zygophyllum fontanesii* W.B.; it is somewhat globular shaped becoming more or less of a circular extended bush. It is native to the African coasts and the Canary Islands. The branches ramificate from the base and are densely covered with pairs of clot-like glaucous leaflets with a dusty farinose surface covering which later turns to yellow.

In the spring of the year, numerous little star-like flowers of a pale-rose color appear, after which the ball-shaped little fruits set; these are green at first, later turning yellow and then orange, finally when the fruit is fully ripened they turn a leather color, containing little black seeds incased in the five celled seed capsule.

This plant is easily propagated from seed, and does well when grown in pots with a very sandy soil and watered occasionally with a liquid manure fertilizer. *Zygophyllum fontanesii* desires a warm location, and may be transplanted to the open in rock gardens providing the soil is of a loamy, sandy character.

The photograph shown herewith is that of a two or three-year-old plant which has no greater attractiveness than the juvenile plants of this species.

An invitation is extended to members of all Cactus Clubs to visit the Geneva Cactus Gardens, 709 North Ave. 66, L. A. from 11 a. m. to 5 p. m., September 9, 1934. Bring your lunch. Tables and coffee will be furnished. A good time will be had by all.

An enviable concession has been granted member Ferdinand Schmoll by the Mexican government. He has been given a special permit to export plants every month in the year, and is now in a position to supply his American and European customers with plants that have been embargoed heretofore.

The price of the Journal and membership in the Society is $3.00 per year. Mail subscriptions to H. Weston, Subscription Editor, 6162 N. Figueroa Street, Los Angeles, California.

Aloe Hybrid—Huntington Botanic Garden Seedling No. 2
A. C. S. No. 6-140-601

New Garden Species

By R. W. Poindexter

This heading will appear from time to time. Under it we shall describe no wild plants, but such as have been originated in gardens and earned the right to survive there. Unlike the botanist, who is in duty bound to describe every new plant he discovers, the horticulturalist may pick and choose, and does. To make sure of keeping plants true to the types we describe, we shall consider only those plants which can be propagated from offsets or cuttings.

The object of this column is fourfold: To

introduce new plants of garden value to gardeners. To name and register plants so that they can be kept true to type for the benefit of collectors. To place plants of garden origin in a distinct category for future reference. To provide material for the study of natural relationships between wild species and genera through the description of their hybrids.

The first object is obvious. We plan to enlarge the scope of the second by maintaining a living collection of the plants described. We believe that this segregation of plants of garden origin will be of value to the systematic botanist, who is sometimes unable to determine whether a given plant is of wild or garden origin, for lack of published data. Thus Britton and Rose mention the case of *Harrisia jusbertii,* which may be a wild species of *Harrisia* or may be a cross between Echinopsis and a Cereus. (Br. & R. Vol. II, p. 158.) This doubt would not exist had its originator published a detailed description, assuming that it is a hybrid. In explanation of the fourth object: systematic botany as it now exists is a science of deduction rather than experiment. The relationship of the various species and genera is based on the judgment, the intuition of the observer rather than on experimental proofs. The hybridization of species gives definite proof that they are related and should be grouped together in the system. A relationship thus established on accurate experimental data is permanently removed from the field of controversy. As an example; the position of *Echinopsis* with regard to other genera is now uncertain. Britton & Rose place it in *Echinocereanae* while to others it clearly belongs in *Cereanae,* close to *Trichocereus.* On the other hand it is stated that *Echinopsis* species can be hybridised with species of *Epiphyllum.* (Desert Plant Life, Vol. VI, p. 38.) Surely here is a chance for some valuable experimental work.

That many of our members are anxious to do constructive work has been amply demonstrated. We should all like to do field collecting, but to many of us the opportunity is not given. Plant origination is just as much pioneering. All are invited to contribute to this department. Bring your protegees out of hiding, baptize them, and let them take their proper places in the plant world.

We shall welcome communications. Where possible, send us descriptions, photographs and specimens of the plants themselves. When publication is made, such specimens will be retained, with the owner's permission, to form a living herbarium. Plants in this collection will not be propagated or disseminated without the owner's permission. Plants do not need to be hand pollinated hybrids to be of interest and value. Chance seedlings which show real distinction from the parent stock are equally desired if they have intrinsic merit. Many of the best garden originations have arisen from chance seedlings, from volunteers, from commercial seed which did not come true and from bud sports. Address communications to the Editor or to R. W. Poindexter at 4160 Country Club Drive, Long Beach, Calif.

ALOE HYBRID—HUNTINGTON BOTANIC GARDEN SEEDLING No. 2
*A. C. S. No. 6-140-601

Parentage: *Aloe lineata* (seed parent) x *A. zebrina*
Originator: William Hertrich
Seed planted October 15, 1925. First bloomed October, 1928

DESCRIPTION

Plant cespitose. Leaves about 20; 75 mm. (3 inches) wide at base and 60 cm. (2 feet) long, tapering uniformly from base to tip, dull green, slightly glaucous, with pale, oblong blotches over the upper surface. Blotches show longitudinal lines, have straight edges parallel with the length of the leaf and roughly concave ends. Spines prominent along leaf edges and perpendicular thereto, red brown, stiff and sharp, unhooked, 6 mm. (¼ inch) long, spaced regularly 2 cm. (¾ inch) apart. Peduncle 50 cm. (20 inches) or more in length, inflorescence branched, with central raceme to 1 meter (39 inches) in length. Flower buds and flowers persimmon red, about 4 cm. (1½ inches) in length, swollen at base. Stamens and pistil included. Plant floriferous with 2 distinct blooming seasons; Spring and Fall.

Mr. Hertrich has had this plant under observation for a number of years and heartily recommends it for garden cultivation on account of its vigorous, healthy growth and its free flowering at two distinct seasons.

* Registration number in Reference Collection of Standary Types. A. C. S. is an abbreviation for Cactus and Succulent Society of America.

The Genus Lithops

By F. Swuste, of The Hague, Holland

Translated from the Dutch by E. J. Labarre of Amsterdam

The extraordinary success of Mr. Swuste in the cultivation of Lithops induced me to ask him to write a short series of articles which would give the Society members the benefit of his great experience in a field which has proved to be so full of difficulties for amateurs. The recent restrictions upon the export from S. Africa of plants belonging to the mimicry species has particularly hit those belonging to this genus; it will, however, be seen from these articles that the importation of these plants, always a risky and expensive undertaking, is no longer necessary. It is even possible that the scientific methods described by Mr. Swuste will enable the Botanical Society of South Africa to restore some of these interesting plants to their native deserts in large quantities, just as other countries reforest their denuded timber lands or restock their rivers with fish.

The series consists of three articles, viz: I. Propagation by seed. II. Mendelism and hybridization in the genus Lithops. III. The Cultivation of Lithops.

E. J. Labarre

I. PROPAGATION BY SEED

THE SEEDS. Among the Lithops we find that the seeds vary considerably in size. Some of these, of *L. van zijlii* for instance, are as minute as those of *Dinteranthus microspermus*, while those of *Lithops fergusonii* are as large as the seeds of the popular cactus *Gymnocalycium denudatum*. Generally speaking, the smaller seeds germinate with greater difficulty than the larger; those of *Lithops van zijlii* are notorious for their poor germinating power.

The smallest seeds should be sown with a teaspoon, and if several seeds happen to fall together, they should be separated with a fine brush or forceps. Such seeds should not be covered with soil. The larger seeds are easier to sow as they can easily be seen with the naked eye and may, although this is not absolutely necessary, be lightly covered with soil. If one can afford the time, it is always desirable to press the hilum or point of attachment of the seeds into the soil, and to give them a slant, as this is the most favorable position for germination.

Before sowing, the seeds should be washed in order to remove, as far as possible, the remains of the funicle or seed stalk. If these fine strings are allowed to remain attached to the seeds, they may, in the damp soil, give rise to rot, which favours molds (hyphomycetes). It is also advisable that the seeds should be washed before sowing because those of many species are frequently infected.

SOIL TO BE USED. If we inspect leaf mold under the magnifying glass in the spring, we see a fairly large number of minute insects, roundish in shape, which immediately jump away on being touched, generally accompanied by another springer, pale-colored and of slender shape. Both kinds destroy our seed, for they feed on it.

We must therefore sterilize the soil and we can do this by steaming it (not roasting). A saucepan with damp leaf mold is placed on a gas burner, the soil being constantly stirred while heating. As soon as the earth is so hot that you cannot touch it with the back of the hand, all living organisms are destroyed. Most bacteria are also killed, the good with the bad. That the good ones are killed does not matter so much, as the soil need only nourish the plants for a very short time. I suggest that this sterilization should be done about November, as the soil can then be allowed to freeze during the winter.

The soil should always be sifted through as fine a mesh as possible. River sand, a coarse variety of sand, should be mixed with the leaf-mold one part of sand to two of mold, and should be washed and dried before use. It is possible, however, that a smaller proportion of sand is desirable. Fine or dune sand is useless because it soon closes up the soil. The chief constituent of sand is silica (Si 02), which probably tends to turn the soil green, particularly if the sand has not been washed.

Sowing should preferably be done in shallow pans of porous material. When the seed has been sown, place the pan in a flat basin and pour into the latter warm water of about

122° Fahr. (50° C.) As soon as the soil is thoroughly saturated right up to the surface, the pan is removed and covered with a sheet of glass. If the direct rays of the sun fall on the glass, it should be shaded with paper, and the drops of water which collect on the inside of the glass should be removed, for if these fall on the soil they encourage the formation of algae.

During germination the soil should never be allowed to dry, even for a short time, as the seeds would die. As soon as a portion of them has sprouted, a little air can be given by sliding the sheet of glass aside. If we look carefully, we shall see that soon after germinating, fine hair-roots appear on the young plants, which serve to convey nourishment to seedlings during the first few days. These fine roots soon disappear, and the permanent root system begins to develop.

TIME OF SOWING. The most suitable time in North West Europe is about the 1st of March, and if a greenhouse (with heat) is available, one may begin as early as February, which gives one about a fortnight before the algae begin to appear. I always sow in the living room, placing the seed pans before the window during the day and behind the stove at night. *The temperature therefore varies between 50—68° Fahr.

Many amateur growers are troubled with molds, hyphomycetes, a thread-like fungus of a glassy appearance; as soon as a plant is infected, the shining threads spread to the other plants, the result being invariably fatal. Such a fungus appears within a few hours; the diseased plant and its immediate surroundings should be removed at once, for even apparently healthy plants near the center of infection are as a rule already infected. The remedy is not to use chemical preparations which are expensive and bad but to place the seed-pans in the strong sun for a few hours without the glass over them, which I have found to be an excellent and radical cure.

I have said that March 1st is a convenient date for sowing, but during the last few years I have always sown at the new moon, that is during the first quarter. At first I thought I had found something new, but later on I learnt that the peasants in South America have for many years sown their corn two days before the new moon, and that a certain kind of tree in Central Africa is always felled after the new moon, because the flow of sap is strongest at this period and the resulting timber from these trees is at its best. In Germany favorable results have also been obtained when sowing under these conditions and I do not think I am at fault in this respect.

PRICKING OFF THE SEEDLINGS. The Lithops should be pricked off for the first time as soon as the plants are 18 to 21 days old, and then again a few times during the summer season. No further planting out should be done after the middle of August. The seedlings should always, within certain limits, be placed as near to each other as possible, but should naturally not inconvenience each other. This proximity greatly favours growth, owing to mitogenetic radiation of living tissue. The transplanted seedlings should still be kept moderately moist, until the first 'pair' of leaves begin to appear, at the same time as the cotyledons gradually disappear. The further treatment is then as that of adult Lithops.

GERMINATING POWER. The seed-capsules of Lithops are ripe, in our latitudes, about the month of May. A few of the early flowering kinds, such as *L. pseudotruncatella, L. rugosa,* and *L. alpina* ripen a little earlier. A ripe capsule will always be outside the newly formed pair of lobes, and not only the capsule, but the stalk will , when the seed is perfectly ripe, be of a straw-color.

If this is the case we then cut this capsule from its stalk and upon examining it we see that it consists of several sections, each closed by a lid or cover. These compartments are fitted with a set of hygroscopic frames; if we drop such a capsule into a cup of tepid water, the hygroscopic frames swell, the lids open and there lie the seeds in full view! This is what happens in nature, when it rains and the seed boxes are saturated.

In order to be thoroughly ripe, Lithops seed should, after being washed and dried, be allowed to lie for at least 3 months. We could therefore sow about the middle of August, but it is better not to do so because of the approaching winter. Seeds thus treated, and sown in the next spring, will give a 100% chance of germination; a figure which is not exaggerated.

Continued in September Journal

* In Holland the stove occasional'y stands out 2-3 feet from the chimney, thus allowing room to place the pans out of the draught.

Neomammillaria wrightii Eng.

Neomammillaria wrightii Eng.

By CLEVE HALLENBECK

The *Neomammillaria wrightii* was a very scarce plant when first described about 75 years ago, and has become more and more "seldom" as the years rolled by. Britton and Rose had neither a specimen nor a photograph of this plant, and had to depend for their illustration upon a crude and very inaccurate drawing. Shulz and Runyon, who got a good photograph of the *wrightii* from somewhere, speak of this plant as "an extremely rare *Neomammillaria*" that "seems to be on the verge of extinction," and add that it is "very rare in collections and rare in the open."

In nature, the *wrightii* grows only at elevations of 6,000 to 6,500 feet, on grassy slopes (not hills) where junipers are just beginning to give way to stunted pines, and where the soil is loose and neutral or slightly acid. It, therefore, is confined within remarkably narrow limits, throughout its range.

Both of its type localities (White Oaks and Anton Chico, New Mexico) are within striking distance of Roswell, and naturally cactus fans of this city have sought the plant industriously. However, the united efforts of the Roswell Cactus Club, through 1932 and 1933, produced but two very small living plants and one dead one.

We—Mrs. Hallenbeck and myself—had been seeking this plant for three years. Our experience, with its climax, forcibly reminded us of Howard Carter's experience in his search for the tomb of Tut-ankh-amen. Carter relates that after several years of fruitless effort, he was ready to admit defeat when, hardly had he set hoe to the ground in a final despairing effort than he made the discovery that far exceeded his wildest dreams.

Since 1930 we had travelled some 2600 miles by car, and had tramped at least an additional 150 miles, in our search for the *wrightii*, and had acquired nothing but blistered heels, sunburn, dirt and mosquito bites. We were ready to admit defeat, but decided upon one final effort in a hitherto unexplored canyon near Anton Chico. And there, after twisting, turning, bumping and back-tracking until we were half a mile from even a sheep trail, we unwittingly stopped our car right in the middle of a colony of our long-sought plant!

There was excitement of a rare sort for two hours. When we finally recovered our usual calm, we found that we had nearly fifty of these plants, all from within a radius of 100 yards of our car. And our wildest dreams had not envisioned more than a pair!

We searched the rest of that day and most of the next for additional specimens, but found no more: we had harvested the whole crop in those two dramatic hours. Another two-day search, a week later, finished the exploration of that canyon without revealing another *wrightii*.

We may add that during the entire spring we had the Mexican boys of White Oaks, Anton Chico and Dilia on the hunt for this plant, for we had offered them $1 per inch in height for every plant brought in. They found not one, although one party of boys hunted up to within a quarter of a mile of this one colony.

All the plants of this colony were comparatively young, (although most of them were of blossoming size)—except one. This one, a big old veteran, clearly was one of the parents of all the rest. We sought the other parent, but it wasn't there.

Perchance some cactus fanciers may be inclined to criticise our action in taking up every plant we found. But where any species is approaching extinction, we think such a course justifiable. The *wrightii* has been entirely exterminated in its original type locality—every foot of which has been explored during the last three years—by sheep and goats. Grazing has been extended in New Mexico until now every acre of land on which the *wrightii* will grow is overrun by these animals. The plant's one chance of survival depends upon its being removed from the range and placed under intelligent cultivation.

Our find has enabled us to offer a description of the *Neomammillaria wrightii* somewhat more complete than any heretofore published. It is depressed-globose in nature, in cultivation globose to oblong, up to 8 cm. high and thick, but usually only 4 to 6 cm., dark green; roots fibrous, extending both downward and laterally near the surface. Tubercles 0.8 to 1.5 cm. long, terete, arranged in poorly-defined spirals, their axils naked, their areoles bearing spines and short white wool. Radial spines normally 14, 5 to 8 mm. long, the lowermost 4 or 5 being white, the next 3 on each side white with brown tips or sometimes half brown, the upper 3 or 4 brown, one or more of these often being sub-central. Centrals normally 4, the upper one straight, the lower 3 hooked, about 1 cm. long, dark brown, often nearly black. Radial spines become horn-colored in age.

Flowers about 2.5 cm. long and wide, the segments recurved. Outer segments broad-linear, acute, olive-green with white margins, 1 to 1.5 cm. long, 0.4 cm. wide; inner segments about 2 cm. long, 3.5 mm. wide, acute, purplish pink. Filaments cerise, greenish below; anthers orange-yellow; style greenish below, pinkish above; stigma-lobes 11, linear, lemon-yellow. The flower opens about 10 a. m. and closes at 4 or 5 p. m. for two successive days, but does not open in totally cloudy weather. Flowering period begins early in June and extends over at least one month: a plant may carry half-grown fruit, blossoms and young flower-buds at the same time.

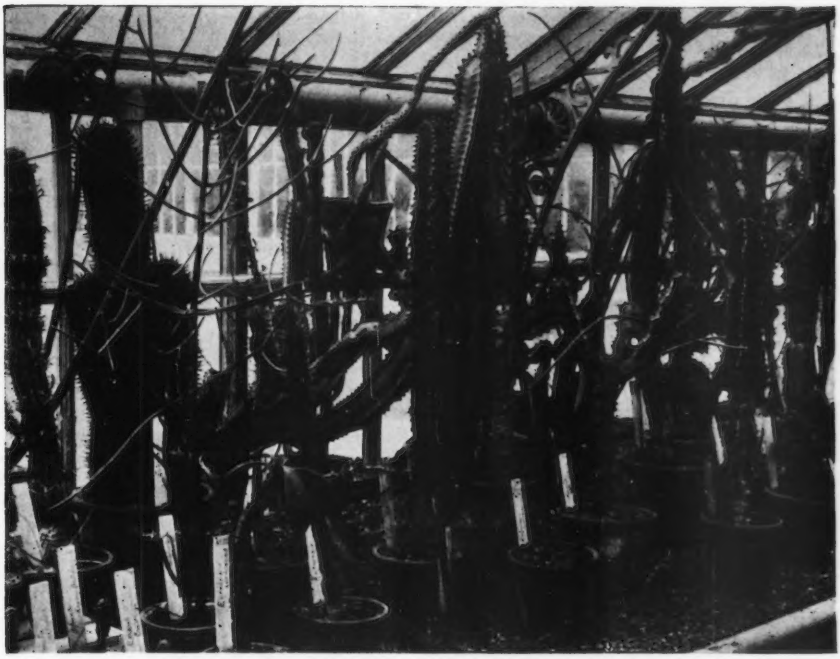
Fruit ovoid, about 1.5 cm. long when mature, dirty purplish, naked, juicy; seeds black, 1.5 cm. long or less, with a narrow ventral hilum.

There is considerable variation in the number and color of spines. In the extreme variation, the radials are all white and there is but one central, porrect, brown, hooked. Between this extreme and the type form we have described are many intermediate forms. About half the plants we have examined conform to our type description. Occasionally there are 5 centrals, all hooked; sometimes of the normally 4 centrals only 1 or 2 are hooked. Also, there is no distinct separation between the centrals and the upper radials.

In nature, the plant receives an average of 14 to 18 inches of rainfall per year, but is subjected to periods of supersaturation and longer periods of extreme drought. It withstands temperatures from 25 below zero to 100 above zero, Fahrenheit. It roots promptly and absorbs water greedily, and if much over-watered is likely to become turgid to an unsightly degree. In cultivation it perhaps should receive some shade during the hours of highest solar intensity, although specimens kept in the full sun were not injured by solar radiation that burned some of our native Echinocerei. In nature the *wrightii* is found only under juniper bushes, but always on the sunniest side, and as far out as is compatible with safety from trampling hoofs.

INDEX TO VOL. V

The usual eight pages of the Britton and Rose reprint has been omitted in this issue to make room for mailing the Index to Vol. V. This is the first time that the index has been mailed to the entire membership and this policy will be continued. Those who have sent in their Volume V, for binding, need not mail this index, since the supply allows for these extra requirements. The next Journal will contain double the usual number of pages of the reprint from "The Cactaceae."



Euphorbias in the Edinburgh Scotland Botanic Garden
Courtesy British Cactus Journal

New Euphorbia Society

The newest plant society to organize is the International Euphorbia Society, which is composed very largely of members of the Cactus and Succulent Society of America. These members in no way break their affiliation with the Cactus Society, but are bent upon devising a means of giving needed attention to this particular group of plants.

This Society's plans are to publish a little magazine devoted exclusively to the Euphorbiae and of interest to the collectors of this family only. It will circularize the entire world, and meet the many demands for more Euphorbia information which the Cactus Journal could not possibly supply space for, without becoming Euphorbia top heavy.

Unlike the cactus collector, the Euphorbiophile today has no comprehensive literature available for the identification, or cultural information for the care of his plants. What information is to be had must be gathered by word of mouth, or what the next nearest collector thinks is the correct thing to do. It therefore is the purpose of the Society to publish a magazine that can be understood by any novice, and at a price within the reach of the most humble collector.

G. A. Frick was elected President; other officers of the organization are: R. Dexter, Vice President; Mrs. K. Auslender, Treasurer; and Mrs. J. M. Warner of 3744 Seneca Ave., Los Angeles, California, Secretary. R. H. Currier and Edmund Lytton were elected Directors to act with the officers.

Eleven old cactus prints in color dated 1835 were presented to the library of the Society by member Irving Levi of Scarsdale, New York. All are well done with the exception of one named *Cereus giganteus* which when scaled with an Indian on horseback standing beside the plant shows it to be about 125 feet high. *Carnegiea gigantea* must have enjoyed good growing times in 1835.

PRESIDENT'S COLUMN

By CHARLES GIBBS ADAMS, *President*

MOST WELCOME PILGRIMS

That your directors and executive officers are able to meet together monthly, or oftener, and transact your business, is made possible by the fact that, through your own wise choice, most of the present ones reside within a radius of thirty miles. That is in the region known as the Metropolitan District of Los Angeles, which embraces, beside the metropolis, itself, such cities of importance to the world of Cacti and other Succulents as Pasadena, Long Beach, Hollywood, San Marino and Claremont, and the broad, mountain-girded, semi-tropic valleys of San Gabriel and San Fernando, which are held to be among the most fertile lands upon the globe.

With the Society's roster of membership bearing addresses scattered over all the continents of earth, it is gratifying to your officers, as well as fine for the individual members in question, (and therefore, the Society in general), that many pilgrims come here to see us from those far-flung lands. This has been particularly so within the past month.

Not only because she travelled the furthest to find us, but also because she devoted every minute of her ten days, only, on American soil, to the study of Cacti and Succulents in California, the most impressive of these recent pilgrimages has been that of Mrs. M. Gatehouse of Sandringham, Victoria, Australia.

Mrs. Harold Weston, that indefatigable worker for the Society, arranged for the reception of this brilliant young lady at the landing of her ship. Mr. Carl Pfadenhauer; Mr. Willian Hertrich, creator of the Huntington Botanic Garden; and Dr. A. D. Houghton, Mr. H. M. Wegener and others, piloted her through their gardens; your president had the pleasure of dining and chauffing her, and procuring her entree into the finest gardens of the Santa Barbara and Monterey regions.

Second as to distance has been Dr. Lionel G. Dobbs of Mendoza, Argentina; but his stay was so forcedly brief that little more could be done for him than a lunch hour with your president. These two found an added bond in their Rotary memberships, as Dr. Dobbs holds the high office of District Governor of Rotary International

It was a disappointment to the Doctor to fail to find his old friend, Assistant Editor Edgar M. Baxter.

At this writing, two of the Society's distinguished members from Texas are sojourning in Southern California:

Mr. J. F. Parks of Dallas has found a faithful guide to our famous gardens in ex-vice President Dr. Jacolyn Manning, who has piloted him through such collections as that of Mr. Boyd Sloane, Mr. George Hoag, your president, etc. The latter has "put him up" at one of the finer men's clubs and plans to show him other courtesies.

To do honor to Dr. W. S. Lowry of Laredo, Texas, Mr. Carl Seelbach has invited to an informal dinner in his gardens at Hawthorne, a number of the notables of the Cactus world who would be most interested in the Doctor's knowledge.

The real purpose of this story is to tell other members who may be coming this way, how glad we shall be to meet them.

We wish some of these could make such splendid sojourns here as did Dr. and Mrs. Erich Werdermann of Berlin last summer. They left a host of friends in California.

Japanese Cactus Booklet. 124 pages 5x7 with 2 colored plates and 67 black and white illustrations. Yukichi Ohashi, No. 22, Sanbancho Kojimachi-ku, Tokio, Japan.

The Japanese book is on Cactus in general. It explains the old system (Opuntia, Cereus, and Mammillaria) and tells something about each of several genera and sub tribes. It is interesting in that a Japanese spelling is given for the proper pronunciation of genus and species names. Their characters are put together to sound the same as we say the names. Some were a little stretched but were very close to proper. The book tells how to grow plants of various genera, seeds, etc., etc. It is one of a series of garden books published by this company. There are no prices and is therefore not a catalog. The names used are of the old style.

CACTUS CULTURE

This is the most up-to-date, practical and comprehensive book published on the culture of Cacti. The most experienced as well as the beginner will find in this book suggestions which will prove both profitable and interesting. 186 pages 5½x8 with fabrikoid binding. Price $2.00. Cactus Society.

Notes on Oklahoma Cacti

II Coryphantha columnaris, a new species

By MARION SHERWOOD LAHMAN

Coryphantha columnaris sp. nov.

Planta solitaria, columnaris, basi contracta, apice depressum, 16-17 cm. alta, 6 cm. diametro.

Tubercula gracilia, 10-12 mm. longa; spinae divaricatae, 5-12 mm. longae; radii 10-18, attenuati, albi, punctae brunneae; centrales quatuor, firmiores, una porrecta 10 cm. longa, tria superiores, minores, deflexae.

Flores multae, in apici plantae, 6½ cm. longae; petales linearis, purpurco-rubrae, margines hyalinae; fila alba, antherae flavae, stigmatae 8, exteriores albae, interiores roseae.

Fructus glabrus, pallido-viridus, sementes brunneae.

Plant solitary, rarely sparsely proliferous, cylindrical, narrowed at base, depressed at apex, 16-17 cm. high, greatest diameter about 6 cm.

Tubercles slender, 10-12 mm. long; spines various, 5-12 mm. long, radials 10-18, fine, white, with brown tips, of varying lengths; centrals four, light-brown, one stout, porrect, 10 mm. long, the upper three smaller, deflexed.

Flowers several to many, clustered at top of plant, 6½ cm. long (including the smooth hypanthium;) inner petals linear, magenta with hyaline margins; outer ones paler, merging into the greenish-straw sepals; filaments white, anthers orange; stigma 8, white without, pink within. Blooms in July.

Fruit a smooth, pale-green berry; seeds light-brown.

Type Locality: Near Altus, Jackson Co., Oklahoma.

Range: Low, sand plains, S. W. Okla.

Type Specimen: In the Herbarium of the Missouri Botanical Garden.

This new cactus belongs in the *Mamillaria vivipara - M. radiosa - M. neomexicana* group called *Corypantha* by Britton and Rose in "The Cactaceae."

Coryphantha columnaris resembles *C. neomexicana* in its columnar form and clustered flowers. It is nearer to C. *radiosa* in its fewer, finer spines. It differs from both in height of plant, narrowed base, depressed apex, slenderness of tubercles, spines and petals, habit of flower in opening merely to funnelform, and in time of blooming, middle of July, while the other two bloom in May. Also the altitude of its range, around 600 ft., is lower. *C. radiosa* is found at 4500 ft. in the extreme north west corner of Oklahoma, and with *C. neomexicana* is common in New Mexico at 5000-8000 ft. I have not seen either of the latter in Jackson Co., but *C. aggregata* is plentiful there.

I discovered the type plant of *C. columnaris* in 1926, growing in sandy soil underlaid with yellow clay. It is now flourishing in my experiment garden, in Tulsa, Okla. along with several young plants. Placed beside living specimens of *C. radiosa* and *C. neomexicana*, it is pronouncedly different in appearance.

Photo by Jim Slack

Coryphantha columnaris, a new species from Southwest Oklahoma. The numerous flowers are magenta, changing to a greenish in the outer parts.

California Cacti

By E. M. BAXTER

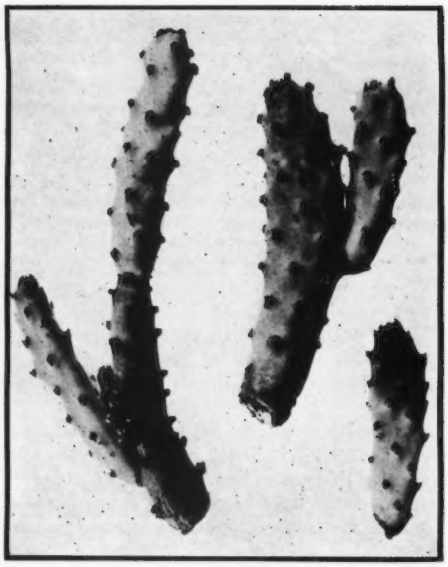
XIV. OPUNTIA BRACHYCLADA

This small species of Opuntia has not been recognized by Britton and Rose in "The Cactaceae," but is very definitely a distinct species of the Basilares Series. Britton & Rose say that it has been suggested that it was a hybrid between a platy—and a cylindropuntia. The round joints that occur are just tiny ones that have been held to that small size because of the severity of climate and geography that it must battle for existence.

In cultivation, where it does very well, the joints grow to a maximum of four inches high by about half as wide and an inch thick. Naturally the plant is found in a restricted area in the San Gabriel and San Bernardino Mountains on the desert slope at an elevation of 4000 to 7500 feet. It is most common in the canyons of the San Gabriel Mountains running down to the Antelope Valley from the Blue Ridge of the Los Angeles County Recreation Camp at Swartout.

The common name is "Dwarf Beavertail Cactus," but it might better be "Snow flower Cactus." Flowers develop soon after the snow that covers the plant during the winter has melted away. They are large, often much wider in spread than the whole size of the joints which bear them. The color varies from pink to light purple and is quite similar to that of *Opuntia basilaris* except that the ovary is shorter and much smaller.

Joints of various plants differ widely according to the conditions in which they grow. Shaded by Pinyon Pines they may be thin and quite round; growing in rich soil made up of leaf mold they will be thick and less compactly grown together; in exposed situations and high altitude they will be small and perfectly cylindric. All of these features persist in new growth for several years in cultivation, but eventually become alike. I have collected specimens in Lone Pine Canyon, at Wrightwood, Swartout Valley, Sheep Creek Canyon, Dead Man's Gulch, and Mescal Canyon, all within a radius of 15 miles. It has been reported from above Big Bear Lake in the San Bernardino Mountains and might be expected in situations there comparable to the canyons of the San Gabriel range.



Opuntia brachyclada, a photograph made from a collection by Dr. David Griffiths and furnished through the courtesy of the Bureau of Plant Industry, U. S. Department of Agriculture. The joints are typical of the higher ranges of the species.

The species differs from *Opuntia basilaris* particularly in the size and shape of joints, the altitudinal range, distribution, size of fruit, and manner of growth. It is distinctly different in being tuberculate, in having prominent wool in the areoles, in the extension of joints underground when covered by debris from Spring snow melting, in its habit of growing under trees and shrubs and in rich mountain soil.

The following is the original description published in the Proceedings of the Biological Society of Washington, Volume XXVII, page 25, issued February 2, 1914. It is complete and sufficient to show the specific difference from *Opuntia basilaris*.

"NEW SPECIES OF OPUNTIA"

By DAVID GRIFFITHS

"OPUNTIA BRACHYCLADA sp. nov."

"A low caespitose species, seldom attaining a height of over 12 to 15 cm., in nature only about

Opuntia brachyclada in Mescal Canyon, San Gabriel Mountains. This clump is typical of the growth of this species. It is about two feet across.

10 cm., but often forming dense masses 50 or more cm. in diameter; joints exceedingly variable, slightly to decidedly flattened or at times almost perfectly terete, narrowly obovate to cylindrical, 2½ by 10 cm. or often 26 by 130 mm. or even as low as 12 by 30 mm., sometimes one on top of the other and 2 or 3 joints high, but usually new joints appear a little below on outside of outer joints of the clump, glaucous, bluish-green, young joints reddish tinged; leaves small, conical, cuspidate, greenish red, about 2 mm. long; areoles subcircular, 3 mm. in diameter, and 10 to 16 mm. apart, spicules light-brown, changing to a dirty brown, at first surrounded by a narrow gray zone of wool, which is later obliterated, the tuft, therefore, occupying the entire areole except the very narrow wool zone, commonly 2 mm. in length, and numerous; spines absent; flowers purple; fruit small, subglobose, 1 to 1½ cm. in diameter, yellow or with a blush of red on one side.

"The spicules are as described above in the type specimen, but they may range in color from dirty-yellow to deep brownish-red as is true of the entire group. The type is preserved under my collection No. 10, 768, and occurs commonly in the mountain valleys above San Bernardino, California."

QUESTION COLUMN

This matter of identification is one that presents a number of problems for one to whom the literature is not available. I have a number of cactus plants which I have never been able to identify satisfactorily. Can I impose on your time to see if you can solve a little local problem? There are two species of Coryphantha in this locality, at least I believe that they are different. They are neither very common, but I have had specimens of each for two or three years. I just obtained a few seed of the second variety which seems to confirm my belief that they are distinct. One plant has been identified as *Coryphantha vivipara*. This has from 10 to 15 radial spines of a glistening white color. Parts of some of the spines are tinged with red. The seed pod varies from a green to a gray color when ripe, is about one-half inches in diameter, and resembles a large gooseberry. The seed are redish-brown color and the flower is a pure pink.

The other variety has from 10 to 13 spines which are a little smaller and a dirty gray color. The tubercles of this plant seem to be a little more slender and farther apart, although I suspect that this may be accidental variation. The seed pod is brick red, about one-fourth inches in diameter, and elongated somewhat. The seed is black and about twice the size of the first variety. I have not much seed available, but am enclosing what I could get. These plants come from Yellow Medicine County, Minnesota, and grow in an outcrop of granite rock along the bed of the Minnesota River. I understand that *Coryphantha missouriensis*, which occurs farther south, is somewhat similar to *vivipara*, but as I have not seen it I do not know if one of the above plants answers the description.

B. R. L., Minnesota.

Your guess that *Coryphantha* is *vivipara* is correct.

The second plant is *Neobesseya missouriensis* Sweet. This species has a range from Minnesota to Montana and from Manitoba to northern Texas. It is readily identified by its conspicuous and attractive round red fruit and yellow flower. They are known to occur in the vicinity of Minneapolis which is an eastern extension of its range recently announced. The species does very well grown in pots or under garden culture.

G. A. Frick

RESOLUTIONS OF THE RIVERSIDE CACTUS AND SUCCULENT CLUB ON THE DEATH OF DR. NATHANIEL LORD BRITTON

Dr. Nathaniel Lord Britton, Honorary President of the Cactus and Succulent Society of America, passed away at his home in New York June 25, 1934, at the age of 75 years.

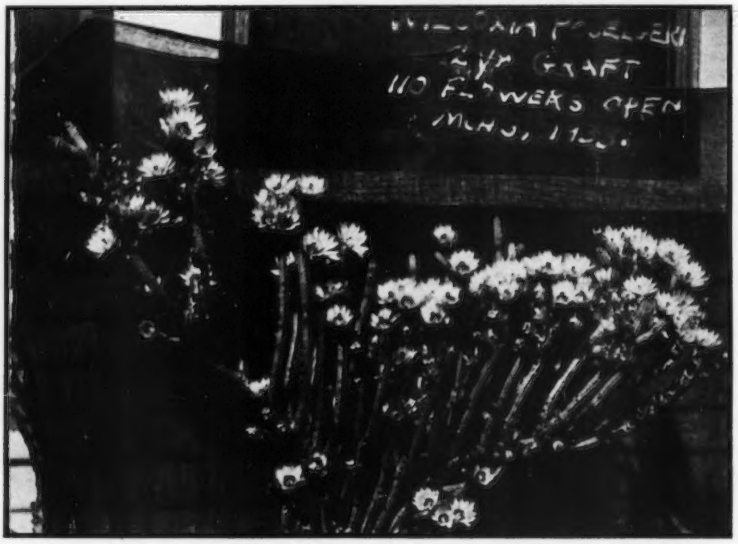
To students of the Cactus family he was best known for his work with J. N. Rose, the four-volume monograph entitled, "Cactaceae," which has been adopted as the standard reference work on the subject by the majority of the groups working with these plants. Aside from the "Cactaceae" his publications include, "The Flora of New Jersey," "Illustrated Flora of Northern United States and Canada" in three volumes, "Flora of Bermuda," and "The Bahama Flora" with C. F. Millspaugh.

For thirty-three years, 1896 to 1929, he was Director of the New York Botanical Garden, starting from an "idea" and developing it to the third most important botanical garden in the world. Doubtless this was the work of an outstanding man and it will remain an enduring monument to him and to his work.

Dr. Britton received many honors from the societies with which he was affiliated having been president of the Botanical Society of New York, New York State Forestry Association, the New York Academy, and the Staten Island Natural Science Association, and was a member of the New York Microscopical Society, the Torrey Botanical Club, the Washington Biological Society, the National Academy of Sciences, the Philosophical Society, and the Linnean Society of London.

The members of the Riverside Cactus and Succulent Club desire to express their appreciation of the great loss to the science of botany in the passing of Dr. Britton, and extend their sympathy to the surviving members of his family, Mr. Richard H. Britton, and Miss Harriet Louise Britton of Great Kills, Staten Island, New York.

Wm. T. Thorne, R. E. Caryl



The oft reported red flowered night blooming cereus is probably explained by this photograph of *Wilcoxia poselgeri* in flower. 110 flowers were open at one time on this two-year old grafted plant in the garden of J. R. Pirtle and Sons of Edinburg, Texas. The flowers are reddish, the stems of the plant very slender, and the roots are tuberous, more dahlia-like than in the true night blooming plant of the Southwest, *Peniocereus greggii*. *Wilcoxia poselgeri* is not a night flowering plant, but might be confused by one who was not familiar with cactus.

REPRINTING BRITTON AND ROSE "THE CACTACEAE" VOL. II

From the many letters received there seems to be a general demand for reprinting Volume II. This volume deals with the Tribe Cereeae and contains 240 pages, 305 illustrations and 40 plates in color. The Editor has hopes that it might be possible to reprint these plates in the same colors as the original work and he is willing to assume the $3000 cost personally if he obtains sufficient support. It might be best to issue this reprint in the form of a supplement quarterly to Journal subscribers so that the binding problem would be simplified and to make larger margins.

To accomplish this plan of reprinting in color we must increase the membership and the only way that this can be done is for each member to send in at least one new subscriber. We are endeavoring to make the contents of the Journal less scientific so that it will appeal to those who are beginning the study of cacti and other succulents. Will you support the Editor in this second undertaking?

SCOTT E. HASELTON.

THE UNIVERSITY OF TEXAS

As a devoted subscriber to the Cactus and Succulent Journal, I should like to register my devout hope that the Society will be able to continue the publication of the Britton and Rose contribution. I believe all the readers will be especially interested in vol. 2, and I trust facilities will be afforded for the continuance of your good work in this direction.

H. P.

BERWYN, PENNSYLVANIA

May I express my appreciation for the reprint of The Cactaceae in the Journal and add all possible weight to the thought you are entertaining of continuing with Volume II? I am confident it would take a long time for you to realize how beneficial the reprint has been. Personally, although I have read most of the more recent works on Cacti and possess Blanc's Catalogue and the current catalogues of many dealers and have found all useful, still, with all respect to these, they are not to be compared with the work of Britton & Rose.

I can not think of anything more educational for the members of the Society than that the work of the reprint be continued. I can also hardly imagine that I should be the only member whose income should be so modest as to be constantly blushing and to whom $50 for a single volume, even if available, looks like a fortune.

I have just finished Robert S. Wood's article "On Pronunciation of Scientific Names" in the July Journal and was very glad to see it there. Greater sympathy with scientific nomenclature with regard to our Cacti is very needful. R. H. W.

A NEW PUBLICATION

A new publication in the cactus field of special interest here in America is Curt Backeberg's "Bulletin of Cactus Research." It is written in four languages—German, Dutch English, and French, and has each species discussed well illustrated.

The Bulletin is issued monthly and illustrates many of the beautiful new species of cactus discovered in South America by Mr. Backeberg. Besides his own discoveries there are also shown new and rare species of other authors.

Britton & Rose' classification of the Cereus has not been widely accepted in Europe so that Backeberg's use of that system is of interest here. He is undoubtedly the outstanding student of the South American cactus in Europe.

The Bulletin is now up to Number 8 of Volume I, having begun its issue in January of this year. The many new species described in it will make it worth while as source material in future years. Each issue contains a discussion of one or more genera and illustrates some species of that genus, with some new species described for the first time in English.

American subscriptions may be sent direct or to E. M. Baxter, Bellflower, California. Rates are 6 months for 90c; $1.70 per year. Subscriptions direct must be sent by International P. O. Money Order to Curt Backeberg, Volksdorf, Hamburg, Germany.

ADVERTISING RATES

$1.50 an inch. Mail ads to the Editor, 6162 North Figueroa St., Los Angeles, Cal., by the first day of the month of issue. Patronize Journal advertisers and please mention the Journal. Illustrations furnished by advertisers will be published when accompanied by an informative article.

"Arizona Cacti" is one of the most valuable books that has been published because of its scientific value in recording the cacti of Arizona and its illustrated glossary of terms used in describing cacti. Every student will appreciate the helpful information it contains. Order your copy now while it is available.

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"Succulents" is a beautiful book. Besides the wonderful colored illustrations, the translation is written so that all can read and understand every word—that is worth a lot. A. S. T., *Glendale.*

FINAL NOTICE FOR BINDING VOL. V.

The Cactus Journal, Vol. V, is now ready for binding. Send your 12 copies to the Editor during the *month of August* together with $1.50 and your magazine will be bound the same as the preceding four volumes. If you do not want the Britton and Rose reprint bound in with your Volume V, remove that section carefully and retain it for binding later. Take advantage of this new low price and if you have complete sets of volumes I, II, III or IV that you wish to have bound, send them in with Vol. V and send an additional $1.50 for each volume. The binding will be completed during the month of September and returned to you postpaid by September 30th. Please mail your Journals to G. A. Frick, 1800 Marengo St, Los Angeles, California.

CHICAGO INVITES YOU TO ATTEND THE HORTICULTURAL EXHIBITS AT THE CENTURY OF PROGRESS EXPOSITION DURING SUMMER 1934.